

Appendix L. Yellowstone National Park Five-Year Wildland Fire Management Plan.

Yellowstone National Park Five-Year Wildland Fire Management Plan.

Yellowstone's five- year plan for the wildland fire management program will focus on hazardous fuel reduction projects within the wildland- urban interface (WUI) and at backcountry cabins. The tabl

Appendix M. Forested Cover Types and Associated Fuel Behavior.

Forested Cover Types and Associated Fuel Behavior.

Lodgepole Pine

A key factor in the lodgepole pine burning cycle is the time since the last fire and subsequent development of the understory. Lodgepole pine is a self-pruning tree. As the tree grows, the crown of green branches rises higher above ground and the trunk is left devoid of branches. This sparse foliage and branching characteristic of young lodgepole pine does not provide much burnable fuel in the understory. The only substantial fine fuels are pine needles and small twigs which are located in the tree crowns in most lodgepole pine cover types. Lodgepole pine is classified into five cover types: LP0, LP1, LP2, LP3 and LP.



30 (LP0)

Recently burned lodgepole pine stands in grass to seedling/sapling stage before canopy closure. Stands are approximately 0- 40 years post- fire.



31 (LP1)

Closed canopy of even- aged, usually dense lodgepole pine where trees are younger and shorter than those of neighboring stands. These stands are characterized as a "young pole" successional stage. A good example of an LP1 stand is found on an outwash plain at West Yellowstone, Montana, where islands of scattered short trees are next to islands of scattered larger trees. Stands are approximately 40 to 100 years post- fire.



32 (LP2)

Closed canopy dominated by lodgepole pine with the overstory still largely intact. Mature lodgepole pine is the successional stage. The understory is usually small to medium Engelmann spruce and subalpine fir seedlings and saplings but may also be dominated by lodgepole pine. Stands are approximately 100 to 300 years post- fire.



33 (LP3)

Ragged canopy of predominately old- growth lodgepole pine but also with some Engelmann spruce, subalpine fir, and whitebark pine in the pole- size class. The stand is considered an old- growth lodgepole pine successional stage. The understory is small to large spruce and fir seedlings and saplings. Stands are approximately 300 plus years post- fire.



34 (LP)

Canopy dominated by old- growth lodgepole pine which are beginning to break up. The understory is lodgepole pine and whitebark pine. Stands are usually found on rhyolitic soils and are multi- aged. Lodgepole pine is the climax or persistent seral species. Stands are 300 plus years post- fire.

The most representative National Fire- Danger Rating System (NFDRS) fuel model for lodgepole pine in Yellowstone is Model G, a dense conifer stand that has a heavy accumulation of litter and downed woody material. These stands are typically old- growth stands, affected by insect, disease, wind, or ice damage which creates a heavy buildup of dead material on the forest floor. The undergrowth is variable, but shrubs are usually restricted to openings. Model G reflects the conditions often found in windthrown or bug- killed stands of lodgepole pine classified as LP2 and LP3 stands—the fuel types that exhibit extreme fire behavior. Model G overpredicts fire behavior in the younger lodgepole pine stands described by LP0, LP1, and LP. These types (LP0, LP1, and LP) are best represented by Model H, which is characterized by healthy lodgepole pine stands with sparse undergrowth and a thin layer of ground fuels.

The most representative Northern Forest Fire Lab (NFFL) fire behavior model for predicting fire behavior in lodgepole pine is Model 8, closed timber litter. The fire behavior of Model 10, timber litter and understory, best represents stands where there is significant down and dead lodgepole pine logs. Fire behavior Model 12, medium logging slash, has been used successfully to predict surface fire behavior in stands of lodgepole pine with 30 tons or more per acre of down and dead material. When crowning and long- range spotting occurs, crown fire models will be used to predict fire behavior and spread.

"Normal" fire behavior conditions in lodgepole pine are characterized by periodic (average) precipitation generally received in afternoon thundershowers. Total precipitation accumulation is usually light but enough to keep fuel moistures high both for fine fuels such as grasses and pine needles and the larger down and dead logs found on the forest floor. During a normal year, Yellowstone will record 20 to 25 lightning- caused fires that will burn less than a total of five acres. Often, each fire involves a single snag and is detected by lookouts. These fires are most often extinguished by rain from the same storm system that started them. These fires have little resistance to control, are easy to extinguish, and burn less than one- tenth of an acre. Such fires only burn a single snag and a small area of duff and/or fine fuels on the forest floor adjacent to the snag.

"Intense" fire behavior in lodgepole pine occurs during extended periods of little or no rainfall. Fuel moisture levels drop and fires are ignited by lightning during thunderstorms. These starts spread at steady rates of one to five acres per day in areas where there is an understory of spruce and fir trees to carry the fire. Fire spread is mainly through the understory and from log to log, occasionally torching individual trees with some short- range spotting. The "intense" scenario weather conditions are such that just enough precipitation is received at intervals of 10 to 14 days to keep the fire danger below the extreme level. Fires ignited under these conditions may burn for months, consuming 1000 to 4000 acres; most acreage is burned during one or two short duration crown fire "runs" driven by high winds under dry conditions.

"Extreme" fire behavior conditions result when fires that start in old- growth lodgepole pine stands (LP3) containing an understory of spruce and fir reproduction are driven by high winds and become very large. Other factors contributing to "extreme" fire behavior include: (1) a significant understory of ladder fuels; (2) drought conditions or long- term drying where 1000- hour fuel (logs 3 to 8 inches diameter- at- breast- height [DBH]) moisture values drop below 10 percent; and (3) high winds sustained for a significant period of time, such as would be experienced in the passage of a dry cold front with strong winds aloft. The resultant fire behavior is an independent crown fire driven by high winds with short duration sustained runs of 10 miles per hour. Long- range spotting occurs ahead of the main fire front. Fire intensities will be sustained until significant precipitation occurs or high winds cease. These fires will be beyond the capabilities of any suppression efforts.

Douglas- fir

The typical fire in the Douglas- fir fuel type begins in an isolated pocket of the stand, then simply goes out without spreading into the sagebrush and grass. The potential for the fire to spread into dead grass fuels is reduced due to grazing by elk and bison. In summer months, greenup of the grass hinders fire spread. In the fall, the potential fire spread is reduced because grass fuels often remain green until the first snowfall, and ignition sources diminish with the cessation of lightning storms around mid- September. Fire spread in this fuel type is dependent upon fire being carried by the grass, burning into the crowns of sagebrush, and being spread by high winds from bush to bush. With low winds, fire creeps through the grass, smolders, and then burns out when temperatures drop and relative humidity rises.



20 (DF0)

Burned or harvested Douglas- fir stands in the grass to seedling/sapling stage before canopy closure. Reproduction is mainly Douglas- fir.



21 (DF1)

Closed canopy of usually dense, even- aged Douglas- fir where trees are younger and shorter than those of neighboring stands. This type is a young successional stage. Stands are approximately 40 to 100 years post- fire.



22 (DF2)

Closed canopy dominated by Douglas- fir. The overstory is still largely intact. It is considered a middle- aged Douglas- fir successional stage. The understory is usually small to medium Douglas- fir seedlings and saplings. Stands are approximately 100 to 200 years post- fire.



23 (DF3)

Ragged canopy of predominately middle- age to old- growth Douglas- fir but also containing some Engelmann spruce, subalpine fir, or whitebark pine in the pole- size class. It is an old- growth Douglas- fir successional stage. The understory is small to large spruce and fir seedlings and saplings. Stands are 300 plus years post- fire.



24 (DF)

Climax to near climax stands dominated by mature to old- growth Douglas- fir, often found in scattered islands surrounded by non- forested lands.

The most representative fire danger model for the Douglas- fir fuel type is NFDRS Model H. This model describes healthy stands with sparse undergrowth and a thin layer of ground fuels. Fires in Model H fuel types are typically slow spreading; intensities are high only in scattered areas where downed woody material is concentrated. In dense stands of old- growth Douglas- fir with a heavy accumulation of litter and downed woody material, Fuel Model G is more representative. Fuels dominated by sagebrush and grass in the Douglas- fir fuel type are best represented by Fuel Model T. This model reflects the spread rate and intensity to be expected if a fire was to burn into or originate in sagebrush.

The most representative NFFL fire behavior predictive model for the Douglas- fir type having a sparse understory is Model 8, closed timber litter. Fuel Model 10 (timber litter and understory) would best represent old- growth Douglas- fir having a heavy accumulation of litter with down and dead material. In stands where fire spread is carried by grasses, Fuel Model 2 (grass with timber overstory) may be the most representative.

"Normal" fire behavior in the Douglas- fir fuel type depends on summer weather conditions. Normally, summer precipitation keeps fuel moisture content relatively high in both down and dead material and live plants. Annual fire occurrence in Douglas- fir fuel types is low, averaging one to two ignitions. Commonly, a single lightning struck tree will smolder and involve only the litter and down, dead material in close proximity to the base of the tree. Fires may smolder for up to two weeks before burning out or being extinguished by thundershowers.

"Intense" fire behavior in Douglas- fir can also occur if there are periods of little or no rain for two weeks and 1000- hour timelag fuels dry to 12 percent. Fire occurrence can increase to five to seven fires in an average "intense" year. These fires "torch out" individual trees and creep in litter and understory vegetation to surrounding fuels, involving more trees and small areas of sagebrush and grass. These fires are of moderate intensity in the large logs and tree trunks of Douglas- fir. To extinguish these fires a complete "mop- up" of the trunks and logs is required. Duff and litter layers are also consumed, and the fire will spread into sagebrush and grass where it will smolder and burn out, requiring little if any mop- up.

"Extreme" fire behavior is caused by drought with continued hot, dry weather from spring into the summer months. The 1000- hour fuels dry to moisture contents approaching 10 percent, while some early curing of grasses occurs. "Dry" lightning storms can start as many as seven to ten fires during one storm. Fire spread is slow in surface fuels, but high fire intensities make these fires highly resistant to control, requiring large amounts of water and numerous personnel to halt the fire's spread. Many trees "crown out" during periods of high winds, sometimes causing spot fires to develop up to one- quarter mile downwind from the main fire. Fire also spreads to surrounding areas of sagebrush and cured grass, with a rapid spread through these areas driven by strong winds. Duff and litter layers are consumed down to mineral soil. Mop- up requires a major commitment of resources for many days.

Spruce/Fir

Typical spruce/fir stands are dominated by Engelmann spruce and subalpine fir in both the overstory and understory. Lodgepole pine, Douglas- fir, or whitebark pine may be present. In many areas, lodgepole pine may be a significant species component while whitebark pine may be the dominant species at higher elevations. Most spruce/fir stands are located in moist areas with supplemental ground water. Fuels consist of grasses, herbs, shrubs, and all age classes of spruce and fir trees.



40 (SF0)

Found in recently disturbed wet areas or high elevation cirques where reproduction is clearly dominated by Englemann spruce and subalpine fir. Canopy closure has not been achieved.



41 (SF1)

Even- aged, closed stand dominated by sapling to pole- size Englemann spruce and subalpine fir. Whitebark pine may also be present in significant numbers. This type commonly occurs in high- elevation cirques where shade and late melting snow make conditions unfavorable for lodgepole pine and whitebark pine. This type may also be found in wet sites at lower elevations.



44 (SF)

Dominated by Engelmann spruce and subalpine fir in both overstory and understory. Lodgepole pine, Douglas- fir, or whitebark pine may be present, but are a minor stand component.

"Normal" fire behavior in spruce/fir stands is of low intensity due to the wet sites this fuel type inhabits. These sites are wet enough to retard a fire's spread through carrier fuels. Single trees will "torch out" when struck by lightning, but fire generally does not spread from the spruce/fir type to other fuel types under normal conditions.

"Intense" fire behavior occurs when fire spreads to other fuel types and may occur late in the fall when cured vegetation dries out sufficiently to carry a fire. Ladder fuels are characteristic of this fuel type; under dry conditions individual and small groups of trees may "torch out" and spread the fire through short- range spotting. Strong winds may spread the fire from crown to crown independent of the surface fire.

"Extreme" fire behavior is possible only under extended drought conditions when ground water dries up, reducing fuel moistures to levels low enough to allow surface fires to spread rapidly with intensities high enough to involve the tree crowns. Groups of trees may "torch" and the fire will then spread from crown to crown and by spotting. Lightning struck spruce or fir trees will readily ignite in drought conditions and carry fire into lodgepole pine and Douglas- fir stands. These fires have the potential to burn large acreages.

Whitebark Pine

Whitebark pine is found at high elevations and is generally associated with Engelmann spruce, subalpine fir, and lodgepole pine. The understory is dominated by whitebark pine and may contain Engelmann spruce and subalpine fir. The understory provides sufficient ladder fuels to spread fire into tree crowns. Typically, whitebark pine only dries out in drought years. Whitebark pine stands exhibit similar fire behavior as lodgepole pine does, except they are located at higher, cooler, and wetter sites and, therefore, do not burn as frequently.



50 (WB0)

Found in recently burned whitebark pine stands, usually located near upper timberline where whitebark pine clearly dominates reproduction.



51 (WB1)

Even- aged, closed whitebark pine stand where trees are younger and shorter than those of neighboring stands. Trees are



52 (WB2)

Closed canopy dominated by whitebark pine. The overstory is still largely intact. Trees are pole- to mature- size. The understory is usually composed of small to medium Engelmann spruce and subalpine fir seedlings and saplings but may be mostly whitebark pine. Stands are approximately 100 to 300 years post- fire.



53 (WB3)

Dominated by middle- age whitebark pine which may also contain considerable Engelmann spruce, subalpine fir, or lodgepole pine. The understory is a combination of Engelmann spruce, subalpine fir, and whitebark pine.



54 (WB)

Stand of middle- age to old- growth whitebark pine where the reproduction is mostly whitebark pine.

Fire behavior in "normal" and "intense" years generally involves a tree struck by lightning which burns a small area of grass, litter, and duff in close proximity to the base of that tree. Stands with significant understory fuels may experience the spread of the fire through ladder fuels into tree crowns. Strong winds are necessary to spread the fire by spotting or independent crown fire.

"Extreme" fire behavior occurs only in drought years. In these dry years, fire can be expected to crown and spot, especially in stands where spruce and fir form a significant part of the understory. Strong winds are necessary to sustain continued fire spread in whitebark pine.

Aspen

Fire behavior in aspen is usually limited to slow moving, wind- driven fires carried by grass. Grassy fuels normally do not cure until late September, well past the normal lightning storm season.



70 (ASP0)
Early post- disturbance aspen stand with predominantly sapling size trees. Trees are usually less than 10 feet tall. Some stands may be maintained in this type by harsh environmental conditions, heavy browsing, or both.



71 (ASP1)
Predominantly small, pole- size, usually vigorous trees. Some stands may be relatively old but stunted by environmental



72 (ASP2)
Pole- size to middle- age trees with more- or- less even canopy and little mortality.



73 (ASP3)
Middle- age to old- growth stand with conifer species well represented to abundant in sapling to pole- size or occasionally mature- size age classes. The overstory is at or near the point of breaking up and being replaced by the emerging conifer understory.



74 (ASP)
Mature to old- growth stand where aspen is the climax or at least a long persistent seral species. Sapling or pole- size aspen are usually well represented and indicate the persistence of aspen dominance through at least another stand cycle. The presence of conifer species is limited to a few individuals, typically sapling to mature age classes.

Historically, fire starts in aspen fuel types are caused by humans. Natural fires are not common. Most aspen stands do not have a significant down and dead component; consequently, fires are of low intensity and relatively easy to suppress. Normally a fire would spread only through the grass into adjacent sagebrush fuels and go out either when the wind stops or when the relative humidity increases at night.

Miscellaneous Fuel Types and Associated Fire Behavior

These remaining fuel types, consisting of limber pine and mixed forest types, are not found in large acreages in Yellowstone. They are not significant with regard to numbers of fire starts, acres burned, or fire spread. The potential does exist in dry years for fire to spread into these fuels from lodgepole pine, Douglas- fir, spruce/fir, or whitebark pine fuel types.

Limber Pine



13 (LI3)

Dominated by middle- age limber pine which may also contain considerable Douglas- fir, Engelmann spruce, subalpine fir, or lodgepole pine. The understory is a combination of Douglas- fir or Engelmann spruce and subalpine fir.



14 (LI)

Middle- age to old- growth limber pine where the reproduction is mostly limber pine. This type and the preceding type are almost exclusively found on the east slopes of the Absaroka Range.



64 (OW)

Open woodland with juniper dominant. Douglas- fir and limber pine are present and sometimes dwarfed in appearance due to extremely harsh site conditions. The understory species are dominated by bluebunch wheatgrass, Idaho fescue, and sagebrush. The tree density is often capable of providing cover for wildlife.

MIXED FOREST TYPES

MF1: mixed forest stand in an early successional stage. The canopy is typically closed and comprised of sapling to pole- size trees.

MF2: stand of large pole to middle- size trees in a mid- successional stage. These stands are still more- or- less even- stand structure.

MF: late successional to climax stage with varied structure and age class representation. Middle- age to old- growth individuals of "early" and "late" successional species are found in the overstory.

LPP: lodgepole pine pygmy forest (height to ten feet) found mainly on Madison Plateau. Multi- age dwarf lodgepole pine with grass understory.

KH: Krumholtz stand consisting of dwarfed, wind- shaped Engelmann spruce, subalpine fir, and whitebark pine stands. This type is usually found in islands interspersed in nonforest areas at the upper tree line.

Appendix N. 1992 Fire Prevention Action Plan.

FIRE PREVENTION ACTION PLAN

GENERAL ACTIONS

The following General Action Items have been identified as elements in the park's overall Fire Prevention Program. The fire prevention analysis identified actions that will be taken to address the major causes of human-caused fires in Yellowstone in the past ten years. The main causes of human-caused fires in Yellowstone the past ten years are unattended campfires, discarded smoking material, and powerlines. These three causes will be addressed in fire prevention material distributed by the park.

1. A general fire prevention message will be developed and included in the park newspaper, added to the fishing regulation handout, broadcast on the park radio, included on the park television station, and posted on the bulletin board of each campground, fire wood concession woodshed, and visitor center.

Responsible person(s): Chief of Interpretation 6/92
Fire Management Officer

2. A general fire prevention message will be developed for users of the backcountry. This message will be included on the backcountry permit, posted at trailheads, included in the Trails End booklet, and included into the backcountry slide tape program.

Responsible person(s): Assistant Chief Ranger,
Resource Management
Fire Management Officer 6/92

3. A general fire prevention message will be developed targeting outfitters and special use groups.

Responsible person(s): Assistant Chief Ranger,
Resource Management
Fire Management Officer 6/92

4. Fire danger signs will be located at entrance stations and

be offered to all NPS and concession employees and a fire prevention message will be incorporated into the seasonal orientation program.

Responsible person(s): Fire Management Officer 6/92

6. Fire prevention programs will be developed and presented to local schools, communities, and private landowners. These efforts will be coordinated with the U.S. Forest Service fire prevention program in the surrounding Yellowstone area.

Responsible person(s): Chief of Interpretation
Fire Management Officer o n -
going

7. A Memorandum of Understanding will be developed with Montana Power Company to address inspection and removal of hazard trees along the powerline corridor, pursue conversion of above-ground powerlines to underground, installation of fault-interruption equipment, and a plan for patrol of the powerline corridor following major wind events to detect trees across lines.

Responsible person(s): Chief of Maintenance o n -
going
Fire Management Officer

SPECIFIC FIRE PREVENTION ZONE RATINGS/ACTION ITEMS

FP ZONE #1 - GALLATIN ZONE

HAZARD

Low Majority of unit burned in 1988 and has limited potential for large fire growth. Fuels are mostly LP1 after 1988.

RISK

Low Limited access, limited use and low historical human-caused fire occurrence.

VALUE

Low No identified structural values. Some historical and cultural sites; Obsidian Cliff kiosk and Appollanaris Spring.

SPECIFIC PREVENTION ACTIONS REQUIRED

1. A general backcountry fire prevention message will be developed and incorporated into the backcountry permit system.
2. A general outfitter fire prevention message will be developed targeting outfitters and special use groups.
3. Fire danger rating will be posted at all trailheads during HIGH fire danger.
4. Backcountry rangers will conduct normal patrols and impart fire prevention message in visitor contacts.
5. The fire prevention message will be disseminated at all entrance stations and will be coordinated with Grand Teton National Park and the USFS through interagency cooperation.
6. Private landowners adjoining the park will be contacted and the prevention message will be explained to them.

Responsible person(s):

Chief of Interpretation
Assistant Chief Ranger, Resource Management
District and Sub-district Rangers
Fire Management Officer

6/92

FP ZONE #2 - NORTHWEST ZONE

HAZARD

High This area has not burned recently and is composed of LP3 fuels with a heavy fuel loading and has a high potential for large fires and large fire growth.

RISK

Moderate Highway 191 corridor, moderate use along the Speciman Creek Trail, and limited backcountry access and use.

VALUES

Low Sportsman Lake cabin, some private land and developments near park boundary.

SPECIFIC PREVENTION ACTIONS REQUIRED

1. Same action items as listed in FP Zone #1 included, specifically the backcountry actions.
2. Fire danger signing information will be updated daily with coordination with USFS for corresponding fire danger rating at all entrance stations.

Responsible person(s):

Same as for FP Zone #1

FP ZONE #3 - MAMMOTH ZONE

HAZARD

Moderate Fuels are not dense and were partially burned in 1988 as well as reduced by manual actions prior to the areas around that eventually burned.

RISK

High High visitor use, Headquarters area, permanent housing areas for 200 people, historical human-caused occurrence area, communication link for the park on Bunsen Peak, main transportation corridor, year-round campground, Mammoth Hotel, associated concessions, and powerline and telecommunication facilities.

VALUES

High Historical structures, archives of historical material, concessions, permanent housing area, and campground.

SPECIFIC PREVENTION ACTIONS REQUIRED

1. General fire prevention and general backcountry fire prevention message will be posted in Mammoth and Indian Creek campgrounds and the Mammoth Visitor Center.
2. Study cost feasibility of burying the above ground powerlines and obtain all proper clearances.
3. Outreach program to Gardiner community with fire prevention message. Work in conjunction USFS efforts.
4. Target seasonal employees for both the NPS and concessioners with fire prevention training.

Responsible person(s):

Chief of Maintenance on-going
Chief of Concessions
Chief of Interpretation
District and Sub-district Rangers
Fire Management Officer

FP ZONE #4 - BLACKTAIL ZONE

HAZARD

Moderate Heavy fuel accumulation near the park boundary, all fuels not burned in 1988 fires. Heavy corridor use area.

RISK

Low Limited access near park boundary, a no campfire area, and a bear closure area.

VALUE

Moderate Structures of concern include Undine, Upper Blacktail cabin, Lower Blacktail cabin, Observation Peak cabin, Hellroaring cabin, Crevice creek cabin, Lava Picnic Area, Nez Perce and Bannock trails, and various archeological and cultural sites.

SPECIFIC PREVENTION ACTIONS REQUIRED

1. General fire prevention and general backcountry fire prevention messages, specifically mentioning the proper use of campfires, proper disposal of toilet paper, and backcountry use for this particular zone.
2. General outfitter message.
3. General employee education program and message.

Responsible person(s):

Same as for FP Zone #1 and #3.

FP ZONE #5 - TOWER ZONE

HAZARD

Low Fuels are generally sparse and associated fire behavior is low when compared to other zones that have greater amounts of LP3 and LP4 fuels.

RISK

High High day use area, 50 miles of developed trails, heavy concession use area with barbecue at Yancey's Hole, and the road junction area.

VALUES

High Tower Ranger Station and developed area, Roosevelt Lodge (National Historical Site) and concession area with cabins and store, Tower store and campground, concession dormitory, water treatment plant, and gas station.

SPECIFIC PREVENTION ACTIONS REQUIRED

1. General backcountry permit message posted at the Tower Ranger Station.
2. General prevention messages and specific message for the Tower area developed by the Tower Interpreter.
3. Regular Ranger patrols of campground and trail system.
4. Fire danger posted and updated daily at Tower Ranger Station.
5. Emphasis of fire prevention message for concession employees that are involved in the barbecue operation at Yancey's Hole.
6. Cache fire tools at Yancey's Hole and instruct employees on proper use of tools.

Responsible person(s):

Tower Sub-district Ranger
Tower Interpreter
Fire Management Officer

on-going

FP ZONE #6 - NORTHEAST ZONE

HAZARD

High Heavy, dense fuels located in proximity to Northeast developed area and the park boundary. There is potential for strong winds to carry fire across the park boundary and onto USFS and private land.

RISK

Moderate Two road corridors outside the park from Red Lodge and Cody, high day use area, two campgrounds (Pebble Creek and Slough Creek), and the Silver Tip Ranch north of the park boundary.

VALUES

Moderate Northeast Entrance Station (National Historic Landmark), Northeast Ranger Station, Lamar Ranger Station and Buffalo Ranch facilities, and Slough Creek transfer station.

SPECIFIC PREVENTION ACTIONS REQUIRED

1. General fire prevention and backcountry fire prevention messages, with emphasis on proper use of campfires.
2. Fire danger sign at Northeast Entrance station. Sub-district Ranger will coordinate with USFS on daily sign fire danger level.
3. Yellowstone Institute will be targeted for fire prevention education. This area to be covered by the Tower Interpreter.
4. Lamar Sub-district Ranger will be local liaison to work with Cooke City, Silver Gate, and USFS for fire prevention outreach.

Responsible person(s):

Lamar Sub-district Ranger
Tower Interpreter
Director, Yellowstone Institute
Fire Management Officer

on-going

FP ZONE # 7 - MIRROR PLATEAU ZONE

HAZARD

Low Area was mostly burned in 1988, fuels are mostly LP1 and associated fire behavior potential is low.

RISK

Low No risks are associated with this remote area.

VALUES

Low Main value is the Mt. Washburn visitor center and lookout with associated telecommunication equipment. Four backcountry cabins are located in this zone, Calfee Creek, Cold Creek, Upper Miller Creek, and Upper Lamar.

SPECIFIC PREVENTION ACTIONS REQUIRED

1. General fire prevention and backcountry fire prevention messages and actions as previously covered in other zones.
2. General fire prevention messages and fire danger posted in Mt. Washburn Visitor Center.

Responsible person(s):

Fire Management Officer
Tower Sub-district Ranger
Washburn Fire Lookout

6/92

FP ZONE # 8 - CANYON/LAKE ZONES

HAZARD

Moderate Fuels are moderately dense around the developed areas but much of the stand is LP1, with much of the Canyon developed area, having burned in 1988. Both areas had hazard fuels reduced around the developed areas in 1988.

RISK

High Major road corridor on the Grand Loop, high visitor use area, major campgrounds at Bridge Bay and Fishing Bridge, heavy day use area, powerline corridor runs through this zone. This zone also has the highest historical occurrence of human-caused fires.

VALUES

High Lake Hotel, Lake Lodge Canyon/Lake permanent housing areas, Canyon Village and cabins, Lake Hospital, two major campgrounds, Bridge Bay boat launch area, Canyon and Fishing Bridge Visitor Centers, powerline corridor, power substation, and fish hatchery.

SPECIFIC PREVENTION ACTIONS REQUIRED

1. General fire prevention and backcountry fire prevention messages posted at visitor centers and campgrounds.
2. Fire danger sign located at Canyon and Lake Ranger Stations with danger posted in visitor centers and campgrounds.
3. Park and concession employees targeted for fire prevention orientation and training.
4. Boating users targeted with special fire prevention message that will be posted at the Bridge Bay boat launch area.

Responsible person(s):

District Interpreter
District and Sub-district Rangers
Fire Management Officer
Chief of Concessions

on-going

FP ZONE # 9 - WEST/MADISON/NORRIS ZONES

HAZARD

Low Fuels in these zones were mostly burned in 1988 or had significant hazard reduction accomplished around the developed areas.

RISK

High High visitor use area, main visitor corridor through West Yellowstone and the West Entrance to Madison Junction, and large campgrounds at Madison Norris Junctions.

VALUES

Moderate West Entrance Station, West Ranger Station and developed areas encompassing Hamilton Store warehouse and general offices, Madison Ranger Station, Norris Ranger Station, Norris Ranger Museum, Norris Geyser Basin Museum, powerline corridor, and Norris substation.

SPECIFIC PREVENTION ACTIONS REQUIRED

1. General fire prevention and backcountry fire prevention messages posted at ranger stations and campgrounds, with emphasis on campfires.
2. Fire danger sign at West Entrance Station. Sub-district Ranger at West to coordinate with USFS for fire danger at Hebgen Lake and Island Park Ranger Stations.
3. Fire prevention outreach to West Yellowstone community, targeting backcountry businesses and Fly Fisherman's Association.

Responsible person(s):

District and West Sub-district Rangers
Fire Management Officer

on-going

FP ZONE #10 - CENTRAL PLATEAU ZONE

HAZARD

Moderate Fuels are moderately dense in most areas, the majority of fuels are LP1 or LP2 with no significant amount of LP3 fuels. Portions of the zone were burned in 1988.

RISK

Low Limited backcountry use with no major road or access corridors.

VALUES

Low Two backcountry cabins. Nez Perce and Mary Mountain. and

powerline corridor. Arnica Creek for fishery values.

SPECIFIC FIRE PREVENTION ACTIONS REQUIRED

1. General fire prevention and backcountry fire prevention messages posted.
2. Coordinate with Montana Power Company to bury powerlines in this zone as outlined in general actions.

Responsible person(s):

Chief of Maintenance
Fire Management Officer

on-going

FP ZONE #11 - MADISON PLATEAU ZONE

HAZARD

High Fuels in this zone are mainly LP3, as only a portion of this zone burned in 1988. Heavy accumulation of dense fuels are found across much of this zone.

RISK

Moderate High backcountry use in Bechler and Shoshone Lake areas, fishing use on Lewis and Shoshone Lakes, road corridor in eastern part of this zone, and one campground.

VALUES

Low South Entrance developed area and Ranger Station, Bechler Ranger Station, Lewis Lake campground, and powerline corridor in eastern part of zone.

SPECIFIC PREVENTION ACTIONS REQUIRED

1. General fire prevention and backcountry fire prevention messages posted.
2. General outfitter message.
3. Fire prevention coordination with Targhee NF on timber sales along the park boundary and woodcutting permits issued along the park boundary.
4. Address the burning of the pit toilets at Shoshone Lake, coordinate with the FMO.
5. Boy Scout and other large groups that use Lewis and Shoshone Lakes will be targeted for fire prevention programs prior to use of these areas.

Responsible person(s):

District and Bechler Sub-district Rangers
District Interpreter
Fire Management Officer

on-going

FP ZONE #12 - OLD FAITHFUL ZONE

HAZARD

Low Fuels were mostly burned during the 1988 fires while hazard fuels around developed areas were reduced prior to the fires. Majority of the fuels are LP1.

RISK

High Heaviest use area in the park due to attraction of the Old Faithful Geyser and thermal areas. Also on the Grand Loop road corridor, moderate backcountry use, heavy day use, and large amount of overnight visitors at concession facilities.

VALUES

High Old Faithful Inn (National Historic Landmark), Old Faithful Lodge and Snowlodge guest facilities, Old Faithful Visitor Center, Old Faithful Ranger Station, Old Faithful Clinic, Old Faithful Hamilton Stores, concession dormitories, and permanent housing and maintenance area.

SPECIFIC PREVENTION ACTIONS REQUIRED

1. General fire prevention and backcountry fire prevention messages posted.
2. Target largest visitor use area with interpretation programs that incorporate the general park fire prevention message into them.
3. Target seasonal concession and NPS employees with fire prevention awareness program.
4. Explore MOU with Montana Power Company to bury powerlines and deal with hazard trees that may impact the powerline.

Responsible person(s):

Chief of Maintenance
District Interpreter
Chief of Concessions
Fire Management Officer

on-going

FP ZONE #13 - WEST THUMB ZONE

HAZARD

Low Fuels in this area were mostly burned during the 1988 fires while the hazard fuels were reduced around developed areas prior to the fires. Most fuels are LP1.

RISK

High High visitor use area at Grant Village developed area and campground, main road corridor from South Entrance and along the Grand Loop road, high boating use area, high backcountry use area around Yellowstone and Heart Lakes.

VALUES

High Grant Village developed area, Hamilton stores, Grant Village Ranger Station and Visitor Center, maintenance area including water and sewage treatment facilities, permanent housing area, and concession dormitories.

SPECIFIC PREVENTION ACTIONS REQUIRED

1. General fire prevention and backcountry fire prevention messages posted, with an emphasis on proper use of campfires.
2. Target boat users with fire prevention message, emphasizing use of campfires along the lakeshore area.
4. Target concession and NPS seasonal employees for fire prevention awareness program.

Responsible person(s):

Grant Sub-district Ranger
Chief of Concessions
Fire Management Officer

on-going

FP ZONE #14 - YELLOWSTONE LAKE ZONE

HAZARD

Low Fuels in this zone are mostly LP1, this area was heavily burned by the 1988 fires.

RISK

Moderate Heavy use on Yellowstone Lake and along the associated lakeshore, moderate to heavy backcountry use, and moderate to heavy outfitter use.

VALUES

Low Backcountry cabins are main values, they include Thorofare Ranger Station, Fox Park, Trail Creek, and Cabin Creek patrol cabins.

PREVENTION ACTIONS REQUIRED

1. General fire prevention and backcountry fire prevention messages posted.
2. Target boat users concerning proper use of campfires along the lakeshore and proper method on reporting new fire starts.
3. General outfitter fire prevention message disseminated to all outfitters.
4. Coordinate fire prevention message with Grand Teton NP and the Bridger-Teton and Shoshone NF's.

Responsible person(s):

District Ranger
Fire Management Officer

on-going

FP ZONE #15 - EAST ZONE

HAZARD

High Fuels are dense, mostly LP3, LP, and DF. This area was not burned by the 1988 fires and little hazard fuel reduction has been accomplished. Potential for large fire growth is high in this zone.

RISK

Moderate Main road corridor and busy visitor entrance area, some boat use along the east shore, limited backcountry use, and heavy visitor use adjacent to the East Entrance area on national forest and private land.

VALUES

Low East Entrance Ranger station and permanent housing area, Park Point and Clear Creeks patrol cabins, and adjacent private holdings at Pahaska Teepee just outside the East Entrance.

SPECIFIC PREVENTION ACTIONS REQUIRED

1. General fire prevention and backcountry fire prevention messages posted.
2. General outfitter fire prevention message disseminated to all outfitters.
3. Fire danger sign at East Entrance station updated daily in coordination with the fire danger rating assigned by the Shoshone NF.
4. Outreach fire prevention program with Pahaska Teepee and landowners and residents in the Wapiti Valley in coordination with Shoshone NF.

Responsible person(s):

East Sub-district Ranger
District Interpreter
Fire Management Officer

on-going

HUMAN-CAUSED FIRES 1982-1991

<u>NO.</u>	<u>YEAR</u>	<u>NAME</u>	<u>DATE</u>	<u>UTM'S</u>	<u>CAUSE</u>	<u>ACRES</u>
1.	1982	GREBE	07/15/82	4956.7 x 534.7	Unknown	.1
2.	1982	CAMP	08/01/82	4920.7 x 537.5	Unknown	.1
3.	1982	GRANT	08/07/82	4914.0 x 534.1	Unknown	.1
4.	1982	WEST	08/14/82	4944.0 x 457.0	Campfire	.1
5.	1982	BISCUIT	08/15/82	4925.1 x 511.6	Campfire	.1
6.	1982	BAUM	08/16/82	4922.4 x 512.0	Campfire	.1
7.	1982	BREEZE	09/08/82	4920.7 x 542.4	Campfire	.1
8.	1983	FISHING	07/30/83	4934.2 x 550.4	Campfire	.1
9.	1983	PICNIC	05/02/83	4973.8 x 547.4	Campfire	.1
10.	1983	COTTONWOOD	09/15/83	4985.0 x 540.2	Campfire	.1
11.	1985	OTTER	06/20/85	4948.8 x 539.2	Campfire	.2
12.	1985	JUNCTION	06/20/85	4943.0 x 511.0	Campfire	.1
13.	1985	NORRIS	07/03/85	4954.0 x 524.3	Campfire	.1
14.	1985	PEBBLE	07/06/85	4983.4 x 570.7	Campfire	.1
15.	1985	VISITOR	08/18/85	4977.9 x 534.1	Campfire	.1
16.	1985	GRANT	08/19/85	4915.6 x 534.2	Campfire	.1
17.	1985	CASCADE	08/21/85	4939.7 x 546.5	Campfire	.1
18.	1985	K-LOOP	08/25/85	4915.6 x 534.2	Campfire	.1
19.	1985	MADISON	08/24/85	4943.2 x 506.5	Campfire	.1
20.	1985	FOX PARK	09/08/85	4887.4 x 556.0	Campfire	.1
21.	1986	QUEENS	07/01/86	4929.3 x 573.4	Powerline	.2
22.	1986	NATURAL BR	07/04/86	4928.4 x 539.2	Powerline	.1
23.	1986	LAVA	08/04/86	4976.2 x 529.5	Campfire	.1
24.	1986	GULL	08/15/86	4930.3 x 546.4	Campfire	.1
25.	1986	PROMONTORY	08/28/86	4911.0 x 557.8	Campfire	.1
26.	1987	KNOWLES	02/29/87	4984.3 x 532.4	Campfire	.1
27.	1987	A-LOOP	08/06/87	4934.5 x 549.8	Campfire	.1
28.	1987	LOPEZ	08/10/87	4970.2 x 520.8	Campfire	.1
29.	1987	TOWER CREEK	08/14/87	4970.8 x 547.7	Campfire	.1
30.	1987	FIREHOLE	10/07/87	4941.5 x 509.9	Campfire	.1
31.	1988	OBSERVATION	06/09/88	4923.3 x 514.1	Campfire	.1
32.	1988	GRIZZLY	07/12/88	4962.8 x 517.9	Campfire	.1
33.	1988	NARROWS	07/14/88	4912.7 x 521.5	Trash	2.0
34.	1988	NORTH FORK	07/22/88	4921.3 x 492.2	Smoker	406,359
35.	1988	COLONNADE	07/28/88	4898.0 x 504.2	Campfire	.1
36.	1988	NORRIS	08/16/88	4953.2 x 524.0	Campfire	.1
37.	1988	HUCK	08/20/88	4887.3 x 520.4	Powerline	20,443
38.	1988	HELLROARING	08/15/88	4986.0 x 554.8	Campfire	17,673
39.	1988	LeHARDY	10/02/88	4937.2 x 549.9	Campfire	.1
40.	1989	PIT	06/14/89	4920.3 x 532.8	Debris burning	.1
41.	1989	CLEAR CREEK	07/14/89	4924.6 x 557.5	Equipment	.1
42.	1989	GLEN	07/25/89	4980.6 x 517.7	Campfire	.1

<u>NO.</u>	<u>YEAR</u>	<u>NAME</u>	<u>DATE</u>	<u>UTM'S</u>	<u>CAUSE</u>	<u>ACRES</u>
43.	1989	SWAN LAKE	08/24/89	4974.0 x 520.0	Campfire	.1
44.	1989	CORRAL	07/31/89	4923.0 x 512.5	Powerline	.1
45.	1989	HOT MIX	09/02/89	4951.8 x 525.8	Powerline	.1
46.	1989	LEWIS LAKE	10/20/89	4902.8 x 528.8	Campfire	.1
47.	1990	TERRACE	07/22/90	4979.2 x 523.1	Campfire	.1
48.	1990	SPECIMAN	07/23/90	4986.1 x 496.2	Campfire	.1
49.	1990	SPRING CREEK	07/18/90	4919.5 x 520.0	Campfire	.1
50.	1990	POWERLINE	08/11/90	4922.5 x 513.0	Powerline	.1
51.	1990	GIBBON	09/02/90	4949.5 x 523.6	Unknown	.1
52.	1990	PELICAN	09/13/90	4933.7 x 550.7	Campfire	.1
53.	1991	ARTIST	07/09/91	4949.6 x 539.2	Vehicle	.1
54.	1991	BLACK BUTTE	08/02/91	4988.9 x 492.8	Campfire	.1
55.	1991	LAKE MAINT	10/16/91	4934.0 x 548.2	Powerline	.1
56.	1991	FISHING BR	10/16/91	4935.2 x 548.6	Powerline	.1
57.	1991	CANYON	10/17/91	4952.5 x 540.4	Powerline	.2

Appendix O. Step-Up Staffing Plan.

Step-Up Staffing Plan.

STEP-UP STAFFING PLAN			
Preparedness Level/ Staffing Class (SC)	Burning Index (BI)	Preparedness Actions	Resources Assigned
1 (Low) <ul style="list-style-type: none"> • 1000 hour fuels wet (> 20% FMC) • Annual and perennial vegetation still green • Fire growth potential is low 	0- 16	<ul style="list-style-type: none"> • Normal preparedness and readiness operations • Helitack crew on normal tour of duty • Fire weather stations activated • All fire equipment in state of readiness • Lookouts staffed 	<ul style="list-style-type: none"> • Duty Officer assigned (ICT3 & FUMA2) • 1 ICT5 on duty • 3 Firefighters (FFT2) on duty • 1 Helicopter Manager on duty • 1 Type VI engine on 5 day tour of duty with 1 Engine Boss (ICT4) • 2 Fire monitors on 5 day tour of duty
2 (Moderate) <ul style="list-style-type: none"> • 1000 hour fuels drying (15 – 20% FMC) • 1 & 10 hour fuels drying • Annual and perennial vegetation drying 	17- 32	<ul style="list-style-type: none"> • Normal preparedness and readiness operations • Aerial detection as necessary • Helitack crew on normal tour of duty • Fire Dispatch available for extended coverage 	<ul style="list-style-type: none"> • Same as PL 1 • 1 Helicopter Manager available for 7- day coverage • 3 Firefighters available for 7- day coverage • 2 Fire Monitors available for 7- day coverage
3 (High) <ul style="list-style-type: none"> • 1 & 10 hour fuels curing • 100 hour fuels drying • 1000 hour fuels drying (12 –14% FMC) and will begin to carry fire • Annual and perennial 	33- 66	<ul style="list-style-type: none"> • Lookouts staffed seven days per week • Lookouts staffed extra hours after lightning • Helitack personnel on seven day coverage • Fire dispatch staffed seven days per week • Fire monitors on seven day coverage • If forecast is LAL 5 or 6 or Holiday, go to SC IV 	<ul style="list-style-type: none"> • Duty Officer assigned for 7- day coverage (ICT3 & FUMA2) • 1 ICT5 7- day coverage • 1 ICT4 7- day coverage • 6 Firefighters available for 7- day coverage • 1 Helicopter Manager on 7- day coverage • 2 Fire Monitors on 7- day coverage • Fire Use Module (if in park) available for 7- day coverage • 1 Type VI Engine with Engine Boss (ICT4) on 7- day coverage
4 (Very High) <ul style="list-style-type: none"> • 1 & 10 hour fuels mostly cured • 100 hour fuels will readily carry fire • 1000 fuels (10- 12% FMC) will carry fire • Ignition Component is high • Potential for moderate fire growth; fire will burn intensely with short spotting probable 	67- 78	<ul style="list-style-type: none"> • Notify Region through Daily Situation Report • Notify neighboring FMOs of very high fire danger via GYA FMO conference calls • Notify neighboring Fire Dispatch Offices • Helicopter on extended standby • Check daily availability of smokejumpers • Check daily availability of retardant aircraft • Status of regional fire suppression resources • Lookouts placed on extended hours • Aerial detection following observed LAL 3 to 6 	<ul style="list-style-type: none"> • Same staffing as PL 3 • 4 District firefighters (FFT2) on call weekdays • 8 District firefighters (FFT2) on call on weekends

		<ul style="list-style-type: none"> • District firefighters on call weekdays • District firefighter on call weekends • Fire information disseminated to Staff, PAO, Communications Center, Visitor Centers, Entrance Stations, Park Visitors, Local Area • Fire Danger communicated via Communication Center morning and afternoon reports • Discuss open fire restrictions with GYA FMOs 	
<p>5 (Extreme)</p> <ul style="list-style-type: none"> • All fuels are dry, light fuels cured • 1000 hour fuels (<10% FMC) • Potential for large fire growth with long- range spotting 	79 +	<ul style="list-style-type: none"> • Park Fire Committee members on standby • Cancel lieu days and leave for Fire Staff • FMO or AFMO on duty • Helitack Foreman on duty • Helitack Crew on duty • Fire Monitors on duty • Fire Use Module on duty • Additional district firefighters available for <ul style="list-style-type: none"> • immediate within park dispatch • Prohibit open fires in backcountry in conjunction with GYA FMOs • If LAL 5 or 6 or dry lightning is forecast, organize-20 person crew • Convene GYA FMOs on at least weekly conference call and determine if open fire restrictions need to be implemented 	<ul style="list-style-type: none"> • Same staffing as PL 4 • Park FMO or AFMO will be available on 7- day coverage and may serve as Duty Officer as needed • 12 district firefighters (FFT2) identified by name and available for immediate dispatch • Identify in- park 20 person crew by name

Appendix P. Pre-Attack Plan.

Pre-Attack Plan.

The Pre- Attack Plan comprises four components: Command, Operations, Planning, and Logistics.

COMMAND

Pre- Attack Wildland Fire Situation Analysis (WFSA) —

A pre- attack WFSA will be completed prior to each fire season incorporating important resource management information and sample cost analysis information to be used on emerging wildland fires that require suppression action. This document will be stored in print form in the FMO's office and in the fire management database records and will be used in the event that a wildland fire incident requires preparation of a WFSA.

Pre- Positioning Needs —

Fire management resources will be pre- positioned or staged at various locations around the park based on fire danger, lightning activity and actual fire occurrence activity. Additional resources will be requested from adjoining agencies or through the interagency dispatch process and staged as determined by the fire management staff.

Draft Delegation of Authority —

A draft delegation of authority form will be kept in the FMO's office along with a sample briefing statement for incoming incident management teams.

Interagency Agreements —

Copies of all fire management interagency agreements will be kept in the FMO's office.

Evacuation Procedures —

The park FMO will recommend evacuation details to the Fire Management Committee. The Chief Ranger on the Fire Management Committee will then recommend evacuation details to the Superintendent. The Superintendent will order evacuation procedures based on an analysis of the fire management situation and recommendations from the Chief Ranger/Fire Management Committee.

Closure Procedures —

The park FMO will recommend closure details to the Fire Management Committee. The Chief Ranger on the Fire Management Committee will then recommend closure details to the Superintendent. The Superintendent will

order closure procedures based on an analysis of the fire management situation and recommendations from the Chief Ranger/Fire Management Committee.

Structural Protection Needs —

Structural fire protection measures will be initiated by direction of the Fire Management Committee. Wildland fire management will work in close coordination with the structural fire department to set up the appropriate structure protection equipment staffed by qualified personnel.

OPERATIONS

Helispot and Helibase Locations —

All helispot and helibase locations and coordinates are part of the fire management mobilization plan that is kept in the fire dispatch office. A list of these coordinates as well as a map will be issued to all fire management personnel.

Flight Routes and Restrictions —

A map of approved flight routes is located in the fire dispatch office and is issued to all fire management personnel.

Water Sources —

All water sources that are approved to be used for fire management operations have been approved by park resource managers. Their locations and coordinates are part of the fire mobilization plan that is kept in the fire dispatch office.

Staging Areas and Fire Camps —

Locations of staging areas and fire camps have been approved by park resource managers and the coordinates are part of the fire mobilization plan that is kept in the fire dispatch office.

PLANNING

Park Base Maps —

Park base maps are located in the fire dispatch, FMO, and fire training offices. Additional maps covering the park are located in the fire management map room. The park GIS lab can also produce detailed maps for any fire management purpose.

Topographic Maps —

Park topographic maps are located in the fire management map room with additional maps available in the park's Supply Center.

Vegetation/Fuel Maps —

Vegetation/fuel maps are located in the fire management office. These maps are stored on the park GIS data layers and are available for any portion of the park upon request from GIS lab personnel.

Hazard Maps —

Hazard maps are located in the fire dispatch office and made known to all fire management personnel. All aviation flight operations personnel are briefed on aerial hazards prior to flight.

Archeological/Cultural Base Maps —

Archeological/cultural base maps are stored on the park GIS base layers. These maps are made available to fire management personnel upon request by the FMO. They are used for fire management operations only and not released to the general public.

Federal Threatened and Endangered Species —

Known locations of Federal threatened and endangered species are stored on the park GIS base layers. The location of the species and the maps are made available to fire management personnel upon request by the FMO. They are used for fire management operations only and not released to the general public.

Sensitive Species Populations —

Sensitive Species Populations locations are stored on the park GIS base layers. The location of these plants and maps are made available upon request by the FMO. They are used for fire management operations only and not released to the general public.

Land Use Status —

Land use information is part of the park GIS base layer map and is available upon request by the FMO.

LOGISTICS

ICP and Base Camp Locations —

These sites and associated utilities have been pre- identified due to the numerous large wildland fire incidents in Yellowstone. This information is located in the park fire management office and known to the Chief of Maintenance and the District Maintenance Foremen.

Roads and Trails Information —

This information is **identified** on park topographic maps and GIS base maps.

Utilities —

This information is identified on park GIS base maps as well as in the Maintenance offices.

Medical Facilities —

There are three medical facilities in Yellowstone: Mammoth Clinic, Lake Clinic and Old Faithful Clinic.

Stores, Restaurants, and Service Stations —

The locations of stores, restaurants, and service stations in the park are generally known to fire management personnel. Detailed information is available from the Business Management office and park concessionaires.

All Other Facilities —

Detailed information on all other facilities is located in the Maintenance and Business Management offices and from park concessionaires, and is made available to fire management personnel upon request by the FMO.

Rental Equipment —

A rental equipment source list is located in the fire dispatch office and coordinated through the ROSS with the park's interagency cooperators.

Appendix Q. Delegation of Authority.

DELEGATION OF AUTHORITY

_____ is assigned as Incident Commander on the _____ Fire. You have full authority and responsibility for managing the fire suppression activities within the framework of law, agency policy, and direction provided in the Incident Management Briefing and Wildland Fire Situation Analysis.

Your primary responsibility is to organize and direct your assigned and ordered resources for efficient and effective suppression of the fire. You are accountable to _____ or their designated representative listed below. Financial limitation will be consistent with the appropriate management response to the values at risk.

Specific direction for the _____ Fire covering management and resource concerns is listed:

CONSTRAINTS:

_____ will represent me on any occasion that I am not immediately available. This authority is effective _____.

UNIT ADMINISTRATOR	DATE TIME
	DATE TIME
	DATE TIME

RETURN OF DELEGATED AUTHORITY

The signing of this document returns the authority and responsibility for the management of the _____ Fire to the Unit Administrator having protection responsibility for the land on which the fire is located.

It is mutually agreed that the objectives and management direction have been met and the _____ Fire Team is hereby released effective

_____ .
DATE TIME

INCIDENT COMMANDER

UNIT ADMINISTRATOR

Appendix R. Minimum Impact Suppression Tactics.

Minimum Impact Suppression Tactics.

The change from fire control to fire management has added a new perspective to the role of fire manager and the firefighter. Traditional thinking that “the only safe fire is a fire without a trace of smoke” is no longer valid. Fire management now means managing fire "with time" as opposed to "against time." The objective of putting the fire dead out by a certain time has been replaced by the need to make unique decisions with each fire start to consider the land, resource and incident objectives, and to decide the appropriate management response and tactics which result in minimum costs and minimum resource damage. This change in thinking and way of doing business involves not just firefighters. It involves all levels of management. Fire management requires the fire manager and firefighter to select management tactics commensurate with the fire’s potential or existing behavior while producing the least possible impact on the resource being protected. The term used to describe these tactics is “Minimum Impact Suppression Tactics,” commonly called MIST. Simply put: MIST is a ‘do least damage’ philosophy.

MIST is not intended to represent a separate or distinct classification of firefighting tactics but rather a mind set—how to suppress a wildfire while minimizing the long-term effects of the suppression action. MIST is the concept of using the minimum tool to safely and effectively accomplish the task. MIST should be considered for application on all fires in all types of land management. While MIST emphasizes suppressing wildland fire with the least impact to the land, actual fire conditions and good judgment will dictate the actions taken. Consider what is necessary to halt fire spread and containment within the fireline or designated perimeter boundary, while safely managing the incident.

Use of MIST will not compromise firefighter safety or the effectiveness of suppression efforts. Safety zones and escape routes will be a factor in determining fireline location. Accomplishments of minimum impact fire management techniques originate with instructions that are understandable, stated in measurable terms, and communicated both verbally and in writing. They are ensured by monitoring results on the ground. Evaluation of these tactics both during and after implementation will further the understanding and achievement of good land stewardship ethics during fire management activities.

GUIDELINES

The intent of this guide is to serve as a checklist for all fire management personnel. Be creative and seek new ways to implement MIST.

INCIDENT MANAGEMENT CONSIDERATIONS

- Fire managers and firefighters select tactics that have minimal impact to values at risk. These values are identified in approved Land or Resource Management Plans. Standards and guidelines are then tied to implementation practices which result from approved Fire Management Plans.
- Firefighter and public safety cannot be compromised.
- Evaluate suppression tactics during planning and strategy sessions to ensure they meet Agency Administrator objectives and MIST. Include agency Resource Advisor and/or designated representative.
- Communicate MIST where applicable during briefings and implement during all phases of operations.
- Evaluate the feasibility of Wildland Fire Use in conjunction with MIST when appropriate for achieving resource benefits.

RESPONSIBILITIES

Agency Administrator or Designee

- Ensure agency personnel are provided with appropriate MIST training and informational/educational materials at all levels.
- Communicate land and fire management objectives to Incident Commander.
- Periodically monitor incident to ensure resource objectives are met.
- Participate in incident debriefing and assist in evaluation of performance related to MIST.

Incident Commander

- Communicate land and fire management objectives to general staff.
- Evaluate suppression tactics during planning and strategy sessions to see that they meet the
- Agency Administrator's objectives and MIST guidelines.
- Monitor operations to ensure MIST is implemented during line construction as well as other resource disturbing activities.
- Include agency Resource Advisor and/or local representative during planning, strategy, and debriefing sessions.

Resource Advisor

- Ensure interpretation and implementation of WFSa/WFIP and other oral or written line officer direction is adequately carried out.
- Participate in planning/strategy sessions and attend daily briefings to communicate resource
- concerns and management expectations.
- Review Incident Action Plans (IAP) and provide specific direction and guidelines as needed.

- Monitor on the ground applications of MIST.
- Provide assistance in updating WFSA/WFIP when necessary.
- Participate in debriefing and assist in evaluation of performance related to MIST.

Planning Section

- Use Resource Advisor to help assess that management tactics are commensurate with land, resource and incident objectives.
- Ensure that instructions and specifications for MIST are communicated clearly in the IAP.
- Anticipate fire behavior and ensure all instructions can be implemented safely.

Logistics Section

- Ensure actions performed around Incident Command Post (ICP), staging areas, camps, helibases, and helispots result in minimum impact on the environment.

Operations Section

- Evaluate MIST objectives to incorporate into daily operations and IAP.
- Monitor effectiveness of suppression tactics in minimizing impacts to resources and recommend necessary changes during planning/strategy sessions.
- Communicate MIST to Division Supervisors and Air Ops/Support during each operational period briefing. Explain expectations for instructions listed in Incident Action Plan.
- Participate in incident debriefing and assist in evaluation of performance related to MIST.

Division/Group Supervisor and Strike Team/Task Force Leader

- Communicate MIST objectives and tactics to single resource bosses.
- Recommend specific tasks on divisions to implement MIST.
- Monitor effectiveness of suppression tactics in minimizing impacts to resources and recommend necessary changes to Operations Section Chief.

Single Resource Bosses

- Communicate MIST objectives to crew members.
- Monitor work to ensure that crews are adhering to MIST guidelines and specific incident objectives.
- Provide feedback to supervisor on implementation of MIST.

IMPLEMENTATION

- Keep this question in mind: What creates the greater impact, the fire suppression effort or the fire?
- Safety
- Apply principles of LCES to all planned actions.
- Constantly review and apply the 18 Watch Out Situations and 10 Standard Fire Orders.
- Be particularly cautious with:
 - Burning snags allowed to burn.
 - Burning or partially burned live and dead trees.
 - Unburned fuel between you and the fire.

Escape Routes and Safety Zones

- In any situation, the best escape routes and safety zones are those that already exist. Identifying natural openings, existing roads and trails and taking advantage of safe black will always be a preferred tactic compatible with MIST. If safety zones must be created, follow guidelines similar to those for helispot construction.
- Constructed escape routes and safety zones in heavier fuels will have a greater impact, be more time consuming, labor intensive and ultimately less safe.
- General Considerations
 - Consider the potential for introduction of noxious weeds and mitigate by removing weed seed from vehicles, personal gear, cargo nets, etc.
 - Consider impacts to riparian areas when siting water handling operations.
 - Use longer draft hoses to place pumps out of sensitive riparian areas.
 - Plan travel routes for filling bladder bags to avoid sensitive riparian areas.
 - Ensure adequate spill containment at fuel transfer sites and pump locations. Stage spill containment kits at the incident.
- Fire Lining Phase
 - Select tactics, tools, and equipment that least impact the environment.
 - Give serious consideration to use of water or foam as a firelining tactic.
 - Use alternative mechanized equipment such as excavators and rubber tired skidders rather than bulldozers when constructing mechanical line.
 - Allow fire to burn to natural barriers and existing roads and trails.
 - Monitor and patrol firelines to ensure continued effectiveness.
- Ground Fuels
 - Use cold- trail, wet line or combination when appropriate. If constructed fireline is necessary, use minimum width and depth to stop fire spread.
 - Consider the use of fireline explosives (FLE) for line construction and snag falling to create more natural appearing firelines and stumps.
 - Burn out and use low impact tools like swatters and gunny sacks.

- Minimize bucking to establish fireline: preferably move or roll downed material out of the intended constructed fireline area. If moving or rolling out is not possible, or the downed log/bole is already on fire, build line around it and let the material be consumed.

Aerial fuels: brush, trees, and snags

- Adjacent to fireline: limb only enough to prevent additional fire spread.
- Inside fireline: remove or limb only those fuels which would have potential to spread fire outside the fireline.
- Cut brush or small trees necessary for fireline construction flush to the ground.
- Trees, burned trees, and snags:
 - Minimize cutting of trees, burned trees, and snags.
 - Do not cut live trees unless it is determined they will cause fire spread across the fireline or seriously endanger workers. Cut stumps flush with the ground.
 - Scrape around tree bases near fireline if hot and likely to cause fire spread.
 - Identify hazard trees with flagging, glowsticks, or a lookout.
- When using indirect attack:
 - Do not fall snags on the intended unburned side of the constructed fireline unless they are an obvious safety hazard to crews.
 - Fall only those snags on the intended burn- out side of the line that would reach the fireline should they burn and fall over.
- Mopup Phase
 - Consider using “hot- spot” detection devices along perimeter (aerial or hand- held).
 - Use extensive cold- trailing to detect hot areas.
 - Cold- trail charred logs near fireline: do minimal scraping or tool scarring. Restrict spading to hot areas near fireline.
 - Minimize bucking of logs to check for hot spots or extinguish fire: preferably roll the logs and extinguish the fire.
 - When ground is cool return logs to original position after checking.
 - Refrain from piling: burned/partially burned fuels that were moved should be arranged in natural positions as much as possible.
 - Consider allowing larger logs near the fireline to burn out instead of bucking into manageable lengths. Use a lever, etc. to move large logs.
 - Use gravity socks in stream sources and/or combination of water blivets and fold- a- tanks to minimize impacts to streams.
 - Personnel should avoid using rehabilitated firelines as travel corridors whenever possible because of potential soil compaction and possible detrimental impacts to rehab work.
 - Avoid use of non- native materials for sediment traps in streams.
 - Aerial fuels (brush, small trees, and limbs): remove or limb only those fuels which if ignited have potential to spread fire outside the fireline.

- Burning trees and snags:
 - *Be particularly cautious when working near snags* (ensure adequate safety measures are communicated).
 - The first consideration is to allow a burning tree/snag to burn itself out or down.
 - Identify hazard trees with flagging, glow- sticks or a lookout.
 - If there is a serious threat of spreading firebrands, extinguish with water or dirt.
 - Consider felling by blasting, if available.

Aviation Management

- Minimize the impacts of air operations by incorporating MIST in conjunction with the standard aviation risk assessment process.
- Possible aviation related impacts include:
- Damage to soils and vegetation resulting from heavy vehicle traffic, noxious weed transport, and/or extensive modification of landing sites.
- Impacts to soil, fish and wildlife habitat, and water quality from hazardous material spills.
- Chemical contamination from use of retardant and foam agents.
- Biological contamination to water sources, e.g., whirling disease.
- Safety and noise issues associated with operations in proximity to populated areas, livestock interests, urban interface, and incident camps and staging areas.

Helispot Planning

- When planning for helispots determine the primary function of each helispot, e.g., crew transport or logistical support.
- Consider using long- line remote hook in lieu of constructing a helispot.
- Consult Resource Advisors in the selection and construction of helispots during incident planning.
- Estimate the amount and type of use a helispot will receive and adapt features as needed.
- Balance aircraft size and efficiency against the impacts of helispot construction.
- Use natural openings as much as possible. If tree felling is necessary, avoid high visitor use locations unless the modifications can be rehabilitated. Fall, buck, and limb only what is necessary to achieve a safe and practical operating space.

Retardant, Foam, and Water Bucket Use

- Assess risks to sensitive watersheds from chemical retardants and foam. Communicate specific drop zones to air attack and pilots, including areas to be avoided.
- Fire managers should weigh use of retardant with the probability of success by unsupported ground force. Retardant may be considered for sensitive areas when

benefits will exceed the overall impact. This decision must take into account values at risk and consequences of expanded fire response and impact on the land.

- Consider biological and/or chemical contamination impacts when transporting water.
- Limited water sources expended during aerial suppression efforts should be replaced. Consult Resource Advisors prior to extended water use beyond initial attack.

Logistics, Camp Sites, and Personal Conduct

- Consider impacts on present and future visitors.
- Provide portable toilets at areas where crews are staged.
- Good campsites are found, not made. If existing campsites are not available, select campsites not likely to be observed by visitors
- Select impact- resistant sites such as rocky or sandy soil, or openings within heavy timber. Avoid camping in meadows and along streams or shores.
- When there is a small group, try to disperse use. In the case of larger camps, concentrate, mitigate, and rehabilitate.
- Lay out camp components carefully from the start. Define cooking, sleeping, latrine, and water supplies.
- Prepare bedding and campfire sites with minimal disturbance to vegetation and ground.
- Personal Sanitation:
 - Designate a common area for personnel to wash up. Provide fresh water and biodegradable soap.
 - Do not introduce soap, shampoo or other chemicals into waterways.
 - Dispose of wastewater at least 200 feet from water sources.
 - Toilet sites should be located a minimum of 200 feet from water sources. Holes should be dug 6- 8 inches deep.
 - If more than 1 crew is camped at a site strongly consider portable toilets and remove waste.
 - Store food so that it is not accessible to wildlife, away from camp and in animal resistant containers.
 - Do not let garbage and food scraps accumulate in camp.
- Monitor travel routes for damage and mitigate by:
 - Dispersing on alternate routes or concentrating travel on one route and rehabilitate at end of use.
 - If a campfire is built, leave no trace of it and avoid using rock rings. Use dead and down wood for the fire and scatter any unused firewood. Do not burn plastics or metal.

Restoration and Rehabilitation

Firelines:

- After fire spread has stopped and lines are secured, fill in deep and wide firelines and cup trenches and obliterate any berms.
- Use waterbars to prevent erosion, or use woody material to act as sediment dams.
- Ensure stumps are cut flush with ground.
- Camouflage cut stumps by flush-cutting, chopping, covering, or using FLE to create more natural appearing stumps.
- Any trees or large size brush cut during fireline construction should be scattered to appear natural.
- Discourage the use of newly created firelines and trails by blocking with brush, limbs, poles, and logs in a naturally appearing arrangement.
- Camps:
 - Restore campsite to natural conditions.
 - Scatter fireplace rocks and charcoal from fire, cover fire ring with soil, and blend area with natural cover.
 - Pack out all garbage.
- General:
 - Remove all signs of human activity.
 - Restore helicopter landing sites.
 - Fill in and cover latrine sites.
 - Walk through adjacent undisturbed areas and take a look at your rehab efforts to determine your success at returning the area to as natural a state as possible.
 - Cover/fill in latrine sites.

Appendix S. List of WUI and Backcountry Cabin Hazardous Fuels Reduction Projects for 2005-2013.

List of WUI and Backcountry Cabin Hazardous Fuels Reduction Projects for 2005-2013.

Year	Developed Areas	Fire Management Unit (FMU)	# of Acres	WUI or HF	NEPA Completed	ESA Section 7 Completed	NHPA Section 106 Completed
2005	Bechler	Southwest	18	WUI	Yes (2002 EA)	Yes (2005 Consultation)	Yes (2005 Consultation)
2006	Norris	Northwest/Washburn Range/Central Plateau	11	WUI	No	Yes (2005 Consultation)	Yes
2007	Madison	Northwest/Central Plateau/Southwest	50	WUI	No	Yes (2005 Consultation)	No
2008	Old Faithful	Central Plateau/Southwest	50	WUI	No	Yes (2005 Consultation)	No
2009	Grant Village	Central Plateau/Southwest/Southeast	11	WUI	No	Yes (2005 Consultation)	No
2010	Tower-Roosevelt	Northern Range/Washburn Range/Mirror Plateau	18	WUI	No	Yes (2005 Consultation)	No
2011	Fishing Bridge	Mirror Plateau/Central Plateau/Southeast	11	WUI	No	Yes (2005 Consultation)	No
2012	Mammoth	Northern Range/Northwest/Washburn Range	11	WUI	No	Yes (2005 Consultation)	No
2013	Bridge Bay	Central Plateau/Southeast	11	WUI	No	Yes (2005 Consultation)	No
	Total		191				
	Backcountry Cabins						
2005	Heart Lake	Southwest	5	HF	Yes (2002 EA)	Yes (2002 Consultation)	Yes (2005 Consultation)
2005	Thorofare	Southeast	8	HF	Yes (2002 EA)	Yes (2002 Consultation)	Yes (2005 Consultation)
2005	South Riverside	Southwest	7	HF	Yes (2002 EA)	Yes (2002 Consultation)	Yes (2005 Consultation)
2006	Three Rivers	Southwest	5	HF	Yes (2002 EA)	Yes (2002 Consultation)	No
2006	Mary Mountain	Central Plateau	14	HF	Yes (2002 EA)	Yes (2002 Consultation)	No
2006	Cove	Southwest	10	HF	Yes (2002 EA)	Yes (2002 Consultation)	No
2007	Nez Perce	Central Plateau	11	HF	Yes (2002 EA)	Yes (2002 Consultation)	No
2007	Fawn Pass	Northwest	9	HF	Yes (2002 EA)	Yes (2002 Consultation)	No
2007	Daly Creek	Northwest	10	HF	Yes (2002 EA)	Yes (2002 Consultation)	No
2008	Sportsman Lake	Northwest	12	HF	Yes (2002 EA)	Yes (2002 Consultation)	No
2008	Cabin Creek	Mirror Plateau	5	HF	Yes (2002 EA)	Yes (2002 Consultation)	No
2008	Observation Peak	Washburn Range	12	HF	Yes (2002 EA)	Yes (2002 Consultation)	No
2008	Pelican Springs	Mirror Plateau	5	HF	Yes (2002 EA)	Yes (2002 Consultation)	No
2009	Upper Miller	Mirror Plateau	12	HF	Yes (2002 EA)	Yes (2002 Consultation)	No
2010	Trail Creek	Southeast	8	HF	Yes (2002 EA)	Yes (2002 Consultation)	No
2010	Calfee Creek	Mirror Plateau	13	HF	Yes (2002 EA)	Yes (2002 Consultation)	No
2010	Cache Creek	Mirror Plateau	15	HF	Yes (2002 EA)	Yes (2002 Consultation)	No
2011	Lamar Mountain	Northern Range	7	HF	Yes (2002 EA)	Yes (2002 Consultation)	No
2011	Lower Slough	Northern Range	7	HF	Yes (2002 EA)	Yes (2002 Consultation)	No
2011	Elk Tongue	Northern Range	5	HF	Yes (2002 EA)	Yes (2002 Consultation)	No
2011	Lower Blacktail	Northern Range	13	HF	Yes (2002 EA)	Yes (2002 Consultation)	No
2012	Cold Creek	Mirror Plateau	5	HF	Yes (2002 EA)	Yes (2002 Consultation)	No
2012	Outlet Cabin	Southwest	10	HF	Yes (2002 EA)	Yes (2002 Consultation)	No
2012	Union Falls	Southwest	10	HF	Yes (2002 EA)	Yes (2002 Consultation)	No
	Total		218				

Appendix T. Roles and Responsibilities by Specific Park Staff Positions.

Roles and Responsibilities by Specific Park Staff Positions.

Superintendent	<ul style="list-style-type: none"> • Fire management in YNP is the responsibility of the Superintendent, with technical duties and accompanying responsibilities delegated to staff members. The Superintendent will be responsible for management of the program under Departmental and NPS policy, the Wildland Fire Management Guideline (DO- 18 and RM- 18), and all relevant laws and regulations. • Ensures that a comprehensive fire management program is adequately planned, staffed, and implemented • Ensures that FMP is reviewed annually and revised as necessary. • Maintains and facilitates public and media relations pertaining to both suppression efforts and prescribed fires. • Prepares and approves WFSAs. • Verifies that sufficient suppression personnel and funding are available if a wildland fire use (WFU) fire is declared a wildfire.
Deputy Superintendent	<ul style="list-style-type: none"> • All decision- making responsibility is delegated to Deputy Superintendent when Superintendent is absent from the park.
Chief Ranger	<ul style="list-style-type: none"> • Implements and executes all aspects of Fire Management Program, except research. • Responsible for overall coordination, direction, and supervision of wildland fire prevention, preparedness, suppression, WFU, prescribed fire, and fuels management. • The Chief Ranger has line authority over FMO and District Rangers and coordinates all wildland fire emergencies. • Serves as a standing member of the Fire Management Committee and presents approved committee recommendations to Superintendent. • Briefs Superintendent and Deputy Superintendent on current and predicted fire management activity. • Recommends approval of the FMP to Superintendent.
Deputy Chief Ranger	<ul style="list-style-type: none"> • All decision- making responsibility is delegated to Assistant Chief Ranger when Chief Ranger is absent • Serves as advisor to Chief Ranger for all planning and decision- making processes regarding fire management operations. • Serves as member of Fire Management Committee.
Fire Management Officer	<ul style="list-style-type: none"> • Responsible for fire management program including preparation and administration of FMP and annual FIREPRO budget. • Revises FMP as needed to incorporate any necessary changes. • Advises and informs Chief Ranger of all information on fire activity in prioritized order. • Completes the prevention analysis which determines the level and type of prevention effort required by the park. • Implements the AMR as determined through the Decision Criteria Checklist or WFSAs as approved by the Superintendent. • Responsible for safe suppression of all wildfires, including initial attack, demobilization, and rehabilitation of the burned area. • Submits fire situation reports as needed based on fire danger and fire activity during fire season to NPS Branch of Fire and Aviation Management, Regional FMO, and GYCC. • Assigns fire monitors to WFU fires and completes daily WFSAs. • Provides fire training opportunities to park personnel to maintain predetermined fire qualification skills in critical positions. Reviews, updates, maintains, and authorizes the entering of fire training and fire experience records into the NPS Wildland Fire Management Computer System. • Ensures adequate inventory of equipment and supplies so that the fire management program can be efficiently implemented. • Develops and implements annual prescribed fire program, including writing of prescribed fire plans. • Ensures preparation of individual prescribed fire plans in accordance with RM- 18 guidelines. • Authorizes each prescribed fire plan by reviewing and signing the plan. • Ensures that briefing statement, delegation of authority, and WFSAs are prepared for the incoming Incident Management Teams. • Ensures implementation of the approved fire prevention program. • Maintains daily contact with the Regional FMO, West Yellowstone Interagency Coordination Center, and Northern Region Coordination Office in Missoula, Montana, during fire season through the fire situation reporting system. • Coordinates the dispatch of park personnel for in- park fire assignments or to provide assistance to other parks and agencies. • Requisitions aircraft, smokejumpers, fire crews, or fire resources and supplies for use within the park. • Ensures maintenance of fire weather stations and that daily weather observations are taken, properly reported, and correctly entered into WIMS.

	<ul style="list-style-type: none"> • Interprets daily NFDERS indices. • Prepares, reviews, and revises cooperative agreements with interagency cooperators. • Maintains liaison with interagency cooperators through annual meetings where agreements are reviewed. • Maintains technical references, maps, and aerial photos for fire management assessment of active fires. • Completes all fire reports (DI- 1202s) and the timely entry of reports into the NPS Fire Management Computer System. • Serves as a member of the Fire Management Committee. Prepares necessary evaluation information for each fire, provides timely update of current and predicted fire behavior, and provides technical advice and recommendations to the committee. • Coordinates the completion of WFIP Stage I- III and functions as a Fire Use Manager. • Is the designated Park Aviation Manager and serves as COR for the Park contract fire helicopter. • Represents YNP in Local, Zone, GYA, and Regional Interagency Coordinating Groups. • Is the designated Inventory Property Manager for all wildland fire capitalized equipment and supplies. • Supervises park's fire dispatch operation.
Assistant Fire Management Officer	<ul style="list-style-type: none"> • All decision- making responsibility is delegated to Assistant FMO when FMO is absent. • Supervises fire cache personnel (Prescribed Fire Specialist, Helitack Foreman, and Engine Foreman). • Maintains emergency fire cache inventory; ensures supply of necessary equipment is adequate, accounted for, and maintained in proper working order. • Responsible to FMO for safe utilization and management of all park aircraft. • Serves as course coordinator/lead instructor for fire management and aviation courses provided in the park. • Responsible for short- haul program. • Develops and administers all aspects of YNP fuels management program. • Designated park field fire suppression supervisor.
Helitack Foreman	<ul style="list-style-type: none"> • Supervises helitack crew and daily field helicopter operations. • Ensures that helicopter operations are performed in a safe manner, following all aviation regulations. • Completes OAS- 23 forms on daily basis. • Serves as an instructor in fire management, aviation, and short- haul training courses. • Provides technical advice and recommendations to FMO and AFMO. • Serves as Initial Attack Incident Commander and Lead Fire Monitor when necessary.
Assistant Fire Dispatcher	<ul style="list-style-type: none"> • Prepares time and attendance reports, travel authorizations, submits travel vouchers, and prepares hiring packets for fire management staff. • Inputs DI 1202s into NPS wildland computer database.
Fire Dispatcher	<ul style="list-style-type: none"> • Receives initial reports of all fires and completes smoke report with all pertinent information. • Immediately notifies FMO and relays fire information to District Ranger. • Facilitates dispatch process by contacting initial attack personnel and initiates flight following. • Maintains computer list of red- carded personnel for dispatch purposes for both in- park situations and assistance to interagency cooperators. Completes resource order form properly and updates information for resource tracking purposes. • Updates fire experience and training records for park personnel in the NPS fire qualification system.
Research Administrator	<ul style="list-style-type: none"> • Assigns a research representative to serve on the Fire Management Committee. • Coordinates fire research efforts.
Public Affairs Officer	<ul style="list-style-type: none"> • Prepares and releases information about the fire management program and current fire activity. • Serves as liaison between news media and park staff, providing timely and accurate fire information updates.
Fire Lookout	<ul style="list-style-type: none"> • Immediately reports new fire starts to the fire dispatcher and provides the information needed to complete the smoke report. • Provides timely updates of changes in fire behavior and serves as initial fire monitor until on- site monitors arrive. • Maintains fire weather station, reporting daily fire weather information to fire dispatcher. • Reports any significant weather changes that may affect fire behavior.

Prescribed Fire Specialist	<ul style="list-style-type: none"> • Assists in management of WFU and prescribed fires from time of assignment until fire is declared out or declared a wildfire. • Serves as a FUMA. • Writes and implement WFSA or Prescribed Fire Plan. • Gathers the necessary data to complete the daily update of the WFSA and for the revalidation process. • Supervises the fire behavior and weather specialists in performance of their information gathering duties. • Determines when the fire is out and when personnel and equipment may be demobilized. • Completes final fire reports. • Supervises Yellowstone Fire Use Module (FUM). • Supervises Park Fire Ecologist and Lead Fire Monitor.
Lead Fire Monitor	<ul style="list-style-type: none"> • Responsible for on- site monitoring of WFU fires which includes gathering fire behavior, fire weather, and fuel loading data and relaying this information to FMO. • Gathers fuels information samples for fire management planning purposes. • Responsible for daily collection of climatological weather and fire weather during fire season; ensures fire weather entered into WIMS daily. • Ensures that all fire weather stations are maintained, including the RAWS. • Maintains historical fire weather records.
Resource Advisor	<ul style="list-style-type: none"> • Serves on the Fire Management Committee to represent resource issues concerning a wildland or prescribed fire. • Assigns Resource Advisor Representatives to fire. • Provides information, analysis, and advice regarding natural and cultural resource issues to Fire Management Committee. • Provides input in development of WFIP and WSFA for resource issues and during incident planning. • Provides input on environmental issues within fire area and appropriate suppression strategies. • Provides recommendations and standards for fire suppression rehabilitation. • Recommends need for a Rehabilitation Team or Burned Area Rehabilitation Emergency Team (BAER). • Completes reporting documentation for fire incident report.
Park Employee	<ul style="list-style-type: none"> • Reports any new fire to fire dispatcher, noting time, location, fire behavior, and vegetation type.

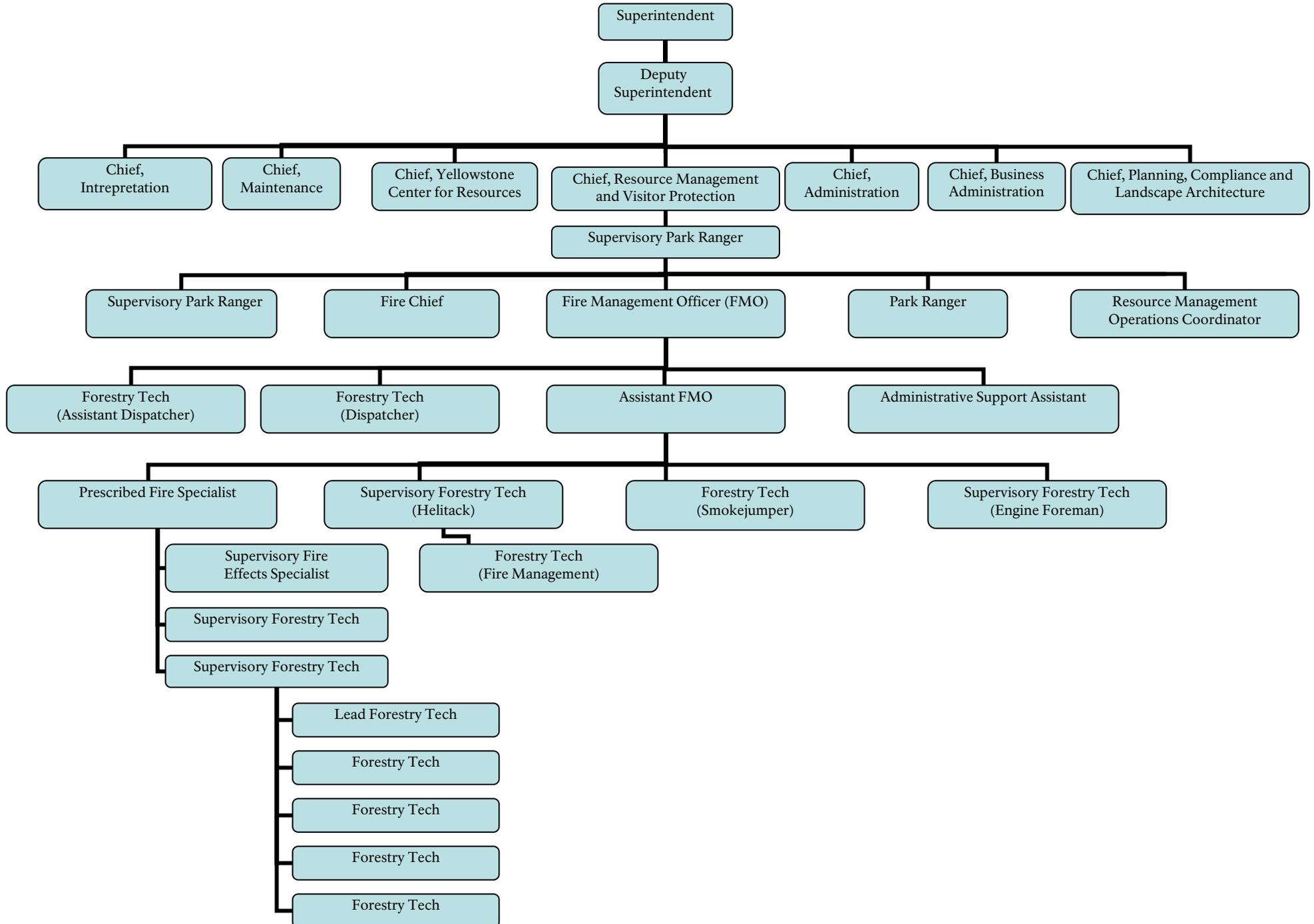
Appendix U. Fire Management Function and Corresponding Responsible Park Staff Position.

Fire Management Function and Corresponding Responsible Park Staff Position.

<u>Decision/Action</u>	<u>Responsible Position</u>
Fire Management Planning	Fire Management Officer Review by Chief Ranger Approval by Superintendent
Wildfire Mobilization	Fire Management Officer Coordination with District Ranger and Division Chiefs
Prescribed Fire and Wildland Fire Use Mobilization	Fire Management Committee Recommendation by Chief Ranger Approval by Superintendent Implementation by FMO/DR
Fire Prevention	Fire Management Officer Approval by Chief Ranger
Interagency Mobilization	Fire Management Officer Approval by Chief Ranger
Interagency Cooperation	Fire Management Officer
Fire Management Training	Fire Management Staff
Public Information	Public Affairs Officer (in consultation with Fire Management Staff)
Fire Research	Research Staff (in consultation with Fire Management Staff)
Public Safety	Chief Ranger/District Rangers Recommendations by Safety Officer
Cultural Resource Protection	Designated Cultural Resource Management Representative
Natural Resource Protection	Designated Natural Resource Management Representative

Appendix V. Relationship of Fire Management Organizational Structure to Yellowstone Organizational Structure.

Relationship of Fire Management Organizational Structure to Yellowstone Organizational Structure.



Appendix W. List of Key Interagency Contacts by Function.

List of Key Interagency Contacts by Function.

Agency Name	Position Title	Phone Number
Grand Teton NP	FMO	307- 739- 3310
Teton IA Dispatch Center	Center Manager	307- 739- 3300
Gallatin NF West Yellowstone	AFMO	406- 823- 6961
Bridger- Teton NF	FMO	307- 739- 5576
Beaver- Deerlodge NF	FMO	406- 683- 3900
Custer NF	FMO	406- 657- 6200
Bozeman Dispatch	Center Manager	406- 587- 6719
Billings IA Dispatch	Center Manager	406- 896- 2901
Northern Rockies Coordination Center	Center Manager	406- 329- 4709
West Yellowstone Interagency Fire Center (Smokejumper base)	Base Manager	406- 646- 7691
Park County, MT Disaster and Emergency Services (DES)	DES Coordinator	406- 222- 4430
Park County, MT Sheriff Office	S.O. Dispatch	406- 222- 2050
Riverton, WY NWS Office	Fire Meteorologist	307- 857- 3898
Aviation Management	Contracting Officer	208- 387- 5762

Appendix X. Yellowstone National Park Closure and Evacuation Procedures.

Yellowstone National Park Closure and Evacuation Procedures.

The Superintendent will make the decisions for closure or evacuation based on recommendations by the Chief Ranger/Fire Management Committee. The following components of fire behavior, operations, and wildland fire personnel limitations will serve as guidelines in this decision-making process.

Partial Closure: Park closure to visitors in specified areas or to one or more of the park's five entrance stations.

Full Closure: Park closure to visitors at all five entrance stations.

Evacuation: Removal of all visitors and employees' families from the park.

The procedures for making evacuation and closure decisions are based on the following elements of fire behavior, operations, and wildland fire personnel limitations.

Fire Behavior

- If fire spread has exceeded suppression efforts and is predicted to impact a major developed area, close one or more of the major road ways (limiting egress) or one or more of the park entrance stations.
- Fire behavior is predicted to pose a threat to visitor life safety at any location in the park or near an adjacent community outside the park boundary.

Operations

- The access/egress route likely is to be heavily used by suppression traffic.
- Extensive air operations pose a threat to a major developed area.
- Incident base location conflicts with routine visitor activities.

Wildland Fire Personnel Limitations

- All initial attack forces are committed.
- Park incidental firefighters and Law Enforcement staff are committed.
- Wildland fires remain unstaffed due to new fire starts and limited fire personnel.
- Interagency relief forces are not available.

Procedures

1. The FMO will recommend closure/evacuation to the Fire Management Committee.
2. The Chief Ranger will recommend closure/evacuation to the Superintendent.
3. The Superintendent will issue park closure/evacuation notice. The Law Enforcement staff and entrance station supervisors under the direction of the Chief Ranger will carry out the notice.
4. Communication Center will issue closure/evacuation via park radio frequencies.
5. The Public Affairs Office will issue the public information notice through normal distribution channels.
6. All park divisions will support the Chief Ranger and Law Enforcement staff in carrying out the closure/evacuation order.
7. The Communication Center and Law Enforcement supervisors will notify the affected State Law Enforcement offices and Departments of Transportation.